

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (currently amended): An isolated thioaptamer that mediates gene silencing, wherein the isolated thioaptamer comprises a partially thiomodified phosphodiester backbone comprising two or more of the following rAMP( $\alpha$ S), rUMP( $\alpha$ S), rGMP( $\alpha$ S), rCMP( $\alpha$ S), rAMP( $\alpha$ S<sub>2</sub>), rUMP( $\alpha$ S<sub>2</sub>), rGMP( $\alpha$ S<sub>2</sub>) or rCMP( $\alpha$ S<sub>2</sub>) and is between 15 and 25 nucleotides, and wherein non-adjacent dA, dC, dG, or dT phosphates are replaced with phosphorothioates.

Claim 2 (original): The thioaptamer of claim 1, further comprising a terminal 3' hydroxyl group.

Claim 3 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises ribonucleotides.

Claim 4 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises deoxyribonucleotides.

Claim 5 canceled

Claim 6 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises from about 21 to about 25 nucleotides.

Claim 7 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises a double stranded thioaptamer with a perfect complementarity match to a target gene and gene silencing occurs by mRNA cleavage.

Claim 8 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises an imperfect complementarity match to a target gene and gene silencing occurs by repressed translation of mRNA to protein.

Claim 9 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises a single-stranded thioaptamer with perfect complementarity match to a target gene and gene silencing occurs by mRNA cleavage.

Claim 10 (previously presented): The thioaptamer of claim 1, wherein the thioaptamer comprises a

part of a RNA-induced silencing complex (RISC) complex.

Claim 11 (original): The thioaptamer of claim 1, wherein the thioaptamer is produced by a DICER complex.

Claim 12 (previously presented) The thioaptamer of claim 1, wherein the thioaptamer comprises a short interfering RNA (siRNA).

Claim 13. cancelled

Claim 14 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises a double stranded thioaptamer of about 21 to about 25 nucleotides long.

Claim 15 (original): The thioaptamer of claim 1, wherein the thioaptamer comprises a single-stranded thioaptamer that is about 15 to about 22 nucleotides long.

Claim 16 (original): The thioaptamer of claim 1, wherein gene silencing is defined further as degradation of an mRNA transcript that is cleaved in the presence of the thioaptamer before it can express a protein.

Claim 17 (original): The thioaptamer of claim 1, wherein gene silencing is defined further as regulation of translation when the thioaptamer binds an mRNA transcript at or about its 3'UTR.

Claims 18-36 cancelled

Claim 37 (currently amended): A composition comprising a thioaptamer of from about 21 to about 25 nucleotides that mediates gene silencing, wherein the thioaptamer comprises a partially thiomodified phosphodiester backbone comprising two or more of the following rAMP( $\alpha$ S), rUMP( $\alpha$ S), rGMP( $\alpha$ S), rCMP( $\alpha$ S), rAMP( $\alpha$ S<sub>2</sub>), rUMP( $\alpha$ S<sub>2</sub>), rGMP( $\alpha$ S<sub>2</sub>) or rCMP( $\alpha$ S<sub>2</sub>); and an appropriate carrier, and wherein non-adjacent dA, dC, dG, or dT phosphates are replaced with phosphorothioates.

Claims 38-96 (canceled)